

Expenditures, Screw-worm Program July 1 - September 30, 1957

The current screw-worm field test has been much more expensive than was anticipated when the program was first planned. Originally, it was estimated that a screw-worm field test could be started in May and finished by September first for a total expenditure of around \$60,000. It develops that almost that amount was required to carry the test through the fiscal year now ending and a careful study of the current program indicates an operational expense of \$20,000 per month in addition to the salaries of the permanent career personnel.

Some of the extra expense was necessary because the test was started as a "crash" program. The starting date of May first did not allow time for careful preparation but estimates had to be made in a hurry in order to get a large-scale field test under way to satisfy Florida cattle interests who were pressing for action.

A new 480 curie cobalt-60 source was on order but its final assembly was delayed at the Brookhaven Laboratory. In order to get the first flies sterilized on schedule, it was necessary to charter a special van to haul the new source to Orlando. The building to house the new source was contracted and the contractor found that he could not meet the specifications for the safety well because of quicksand and excessive water in the subsoil. That contract had to be canceled and the builder paid off for his futile efforts so that a new installation could be contracted for and completed to receive the source before the end of April.

As the Orlando laboratory had only one month's notice for the large-scale field test they did not have a backlog of frozen meat and until horse meat could be contracted for at the previously anticipated rate of \$.25 per pound it was necessary to use \$.55 per pound ground beef.

The Orlando laboratory had completed, last fall, a rearing establishment of 1,000,000 flies weekly capacity. The new project called for the release of 2,000,000 flies weekly. This required a modification of the insectary to double the space for larval rearing. Other laboratory space on the station grounds had to be modified to make room for the adult colony, to provide space for packaging flies in release containers, and holding the flies prior to release under proper conditions of temperature and humidity. The estimates Dr. Bushland had to make in a hurry in Washington proved over optimistic and the new construction was much more expensive than anticipated.

After the program was started at Orlando it became apparent that many of the jobs were more difficult than anticipated and that the estimates for temporary helpers in the category of field aids and laborers would have to be increased. The Florida screw-worm infestation proved to be much more serious than ever noted before in our field operations. Whereas previously we considered screw-worms in outbreak proportions if a test pan of goats furnished an average of 15 egg masses per week, we found this season an index of 70 egg masses, or in other words that the situation was almost five times as bad as in previous years.

As the Orlando Laboratory had only one month's notice for the large-scale field test they did not have a backlog of frozen meat and small horse meat could be contacted for at the previously anticipated rate of \$1.25 per pound it was necessary to use \$1.25 per pound ground beef.

The Orlando Laboratory had completed, last fall, a rearing establishment of 1,000,000 flies weekly capacity. The new project called for the release of 2,000,000 flies weekly. This required a modification of the insectary to double the space for larval rearing. Other laboratory space on the station grounds had to be modified to make room for the adult colony, to provide space for packaging flies in release containers, and holding the flies prior to release under proper conditions of temperature and humidity. The estimates Dr. Bushland had to make in a hurry in Washington proved even optimistic and the new construction was much more expensive than anticipated.

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In order to conduct the field test with the utmost economy we tried to perform some of the operations with the facilities which had been built for a weekly production of 1,000,000 flies. When we reared flies at the rate of 2,000,000 weekly we tried to get by with the same number of larval sand trays and the same number of pupal holding trays as used previously. This crowding proved unexpectedly harmful to the test insects and there was undue mortality of insects before and after sterilization.

A few rush tests made in advance of the field releases suggested that flies could be loaded in release cartons at the rate of 800 flies per package. During the course of the test it developed that although flies lived in the cartons at that rate and could fly from the cartons when they were opened, large numbers of released insects died within a few days. Other laboratory tests were then made which established that the maximum loading rate should be 500 flies per release package in order not to have the insects weakened by confinement and crowding.

These discoveries were made while the field releases were underway and it was not until June 10, that the full quota of vigorous sterilized flies could be released in the field. The six weeks' previous releases had mated with approximately 25 percent of the wild flies in the center of the test area but that rate was not sufficient to depress the population. The current results show that we have corrected the difficulties and we expect 50 percent or more sterile matings starting the last week in June. This rate of sterility should start reducing the native screw-worm population and subsequent releases should be even more effective.

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A few more tests were made in view of the field releases suggested that flies could be tested in release cages at the rate of 500 flies per cage. During the course of the test it developed that although flies lived in the cages at that rate and could fly from the cages when they were opened, large amounts of released insects died within a few days. Other laboratory tests were then made which established that the release cages rate should be 200 flies per release package in order not to have the insects weakened by confinement and crowding.

These observations were made while the field releases were underway and it was not until June 15, that the full power of vigorous sterilized flies could be released in the field. The six weeks' previous releases had been with approximately 25 percent of the wild flies in the center of the test area but that rate was not sufficient to depress the population. The current results show that we have corrected the difficulties and we expect 50 percent or more sterile releases starting the last week in June. This rate of sterilization should start reducing the native vector-borne population and subsequent releases should be even more effective.

Because of the aforementioned difficulties the project is going to require approximately one month longer for completion than was previously estimated in the preliminary conferences last March. We have therefore drawn up a budget of operating expenses for the months of July, August, and September which we think will be sufficient time to demonstrate a high degree of control in the test area. This budget is realistic, being based on the past six weeks' operations. We now know the minimum requirements for facilities and personnel and these are shown in the attached tabulation.

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SCREW-WORM BUDGET July 1 - September 30, 1957

Personnel

8 Laborers
12 Biol. Aids GS-4
1 Engineer GS-11

\$5,339
10,638
1,909

3900
\$17,886

Travel and Per diem

Bushland 92 days
Husman 92 days
Poeske - 2 weeks in July

828
828
280

1,936

Facilities & Equipment

Aircraft rental - 546 hrs. at \$11.50
New rearing vats
New release cartons & devices
New experimental colony equip.
Vehicle maintenance
Gas & Oil
Goats
Goat feed
Medium (meat & blood)
Misc.

6,279
5,000 ?
2,000
2,000 ?
1,000
4,000
3,000
2,400
13,500
2,000

3000
2000
1500
1500
2000
4500

41,179

Total

61,001

Desirable Additions

Airplane release devices
Additional airplane rental 100 hrs.
to study fly drift
1 Biol. Aid GS-4, \$3415.00
1 Clerk-Typist (temporary) GS-3, \$3175.00

3,000
1,150
854
800

5,804

Grand total

\$66,805

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Alphane release device
Additional airplane rental 100 hrs.
to study fly drift
1 Biol. Aid 25-4, 2312.00
1 Clerk-Typist (Temporary) 25-3, 2312.00

408.2

Personnel--L/A Employees

<u>Employee</u>	<u>Grade & Salary</u>	<u>Duties</u>
Joe L. Bass	GS-4 Field Aid \$3415 p/a	Tend goat pens & collect egg masses
Ralph E. Hughey	do.	do.
Cecil L. Mathis	do.	do.
Robert L. Simmons	do. (ADED)	do.
Glenn L. Taylor	do.	do.
Leslie L. Britt, Jr.	do. (ADED)	Package, transport & release flies
Terry E. Fye	do.	do.
Carlton L. Burroughs	do.	Radiation & packaging flies
Gordon M. Watson	do. (ADED)	Larvae rearing
Michael Collins	do.	do.
Vacancy	do.	do.
James D. Mallory	do.	Check controls, egg hatching & mortality
Vacancy	do.	do.
Vacancy	GS-3, \$3175 p/a	Clerk-Typist (temporary)
James E. Honor	WB Laborer III \$1.24 hr. (ADED)	Fly colony & maintenance
Ernest Stafford	do.	do.
George M. Hogan	do. (ADED)	Assembling release cartons
Hershell Hogan	do.	do.
John M. Anderson	do.	do.
Theodore R. Harris	do.	Larvae rearing
Robert L. Jefferson	do.	do.
Henry G. Young	do.	do.

Personnel--I/A Employees

<u>Duties</u>	<u>Grade & Salary</u>	<u>Employees</u>
Tend goat pens & collect egg masses	GS-4 Field Aid \$2415 p/a	Joe L. Bass
do.	do.	Ralph E. Haggerty
do.	do.	Cecil L. Martin
do.	do.	Robert L. Simmons
do.	do.	Glen L. Taylor
(AED)	do.	
Package, transport & release flies	do.	Leslie L. Britt, Jr.
do.	do.	Terry M. Tye
Radiation & packaging flies	do.	Carlson L. Burroughs
Larvae rearing	do.	Gordon M. Watson
do.	do.	Michael Collins
do.	do.	Vacancy
Check controls, egg hatching & mortality	do.	James B. Kelly
do.	do.	Vacancy
Clerk-Typist (temporary)	GS-3, \$2175 p/a	Vacancy
WB Laborer III \$1,241 hr. (AED)	do.	James E. Hoyer
Fly colony & maintenance	do.	Ernest Stafford
do.	do.	
Assembling release cages	do.	George M. Hogan
do.	do.	Harrell Hogan
do.	do.	John M. Anderson
Larvae rearing	do.	Theodore R. Harris
do.	do.	Robert L. Gelfand
do.	do.	Henry G. Young

Ma. Funds

Quesko

Clarke - Siviter Co Inc

24 Subs sq

60 24

1 - Roll hardware cloth

47 14

Falkner Inc

24 Pupae Pans

4 ²⁰/_{ea}

100 80

Furner - Haack - Co

24 Buv Pans 18x26 tin plated

1 ⁴⁰/_{ea}

33 60

Additional on GSA order

50 00

~~\$291 78~~

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12 Biol. Aids GS-4	10,638	
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Facilities & Equipment

Aircraft rental - 546 hrs. at \$11.50	6,279	
New rearing vats	5,000	
New release cartons & devices	2,000	
New experimental colony equip.	2,000	
Vehicle maintenance	1,000	
Gas & Oil	4,000	
Coats	3,000	
Goat feed	2,400	
Medium (meat & blood)	13,500	
Misc.	<u>2,000</u>	41,179
Total		60,629

Desirable Additions

Airplane release devices	3,000	
Additional airplane rental 100 hrs. to study fly drift	1,150	
1 Biol. Aid GS-4, \$3415.00	854	
1 Switchboard Operator GS-2, \$2960.00	<u>740</u> 800	5,594
<i>click steno 43-3 3175.00</i>		
Grand total		66,373

